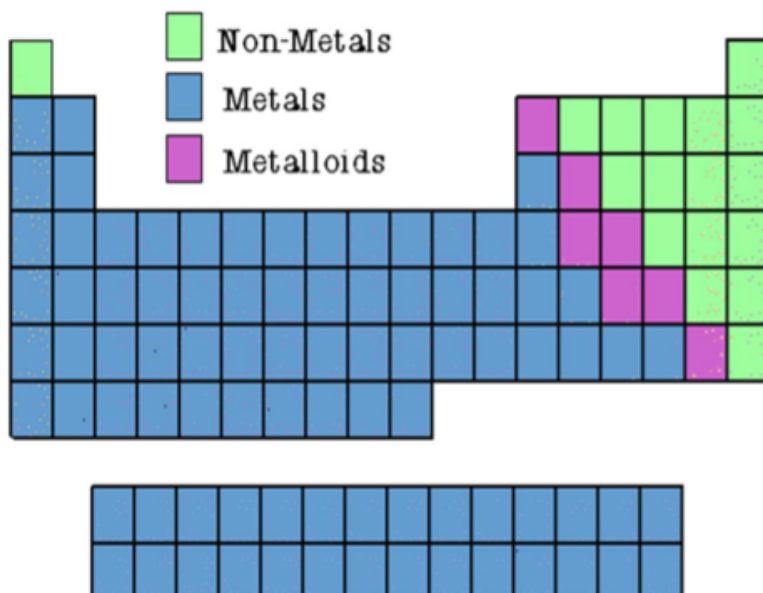


The elements of the periodic table can be divided into three main categories: Metals, Non-Metals, and Metalloids.



- Properties of Non-Metals:

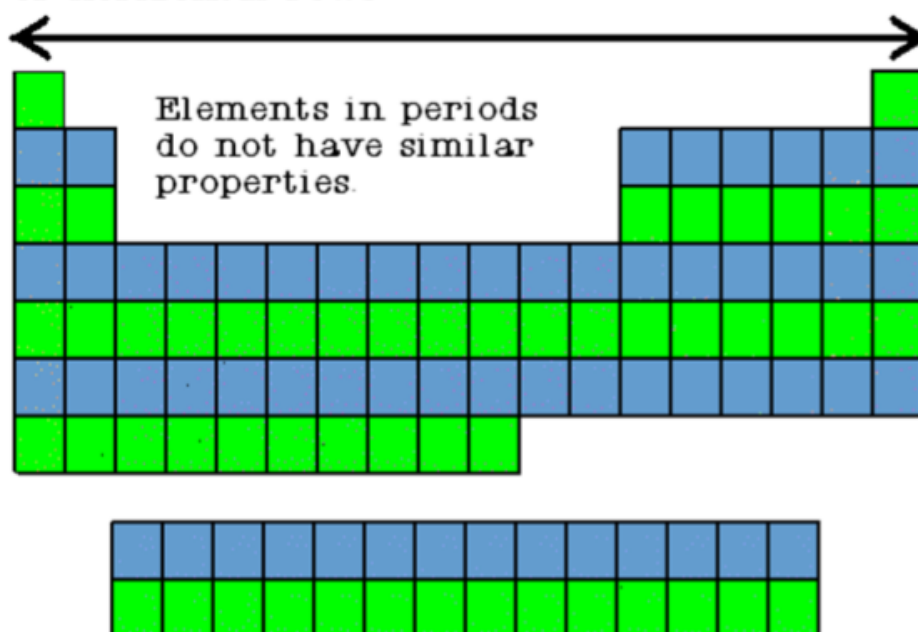
- Found on the right side of the periodic table
- Non-metals
 - poor conductors of heat and electricity
 - not ductile or malleable (solid non-metals break rather than bend)
 - they are dull in appearance
- Many of non-metals are gases

- Properties of Metals:
 - Found on left side of periodic table
 - Metals are...
 - shiny
 - good conductors of heat and electricity
 - ductile (make into thin wires)
 - malleable (make into thin sheets)
 - chemical property is that metals react with water, which results in rust/corrosion

• Properties of Metalloids:

- Located between metals and non-metals on periodic table
- Have properties of both non-metals and metals
- They are...
 - dull or shiny.
 - ductile and malleable.
 - conduct heat and electricity better than non-metals but not as well as metals

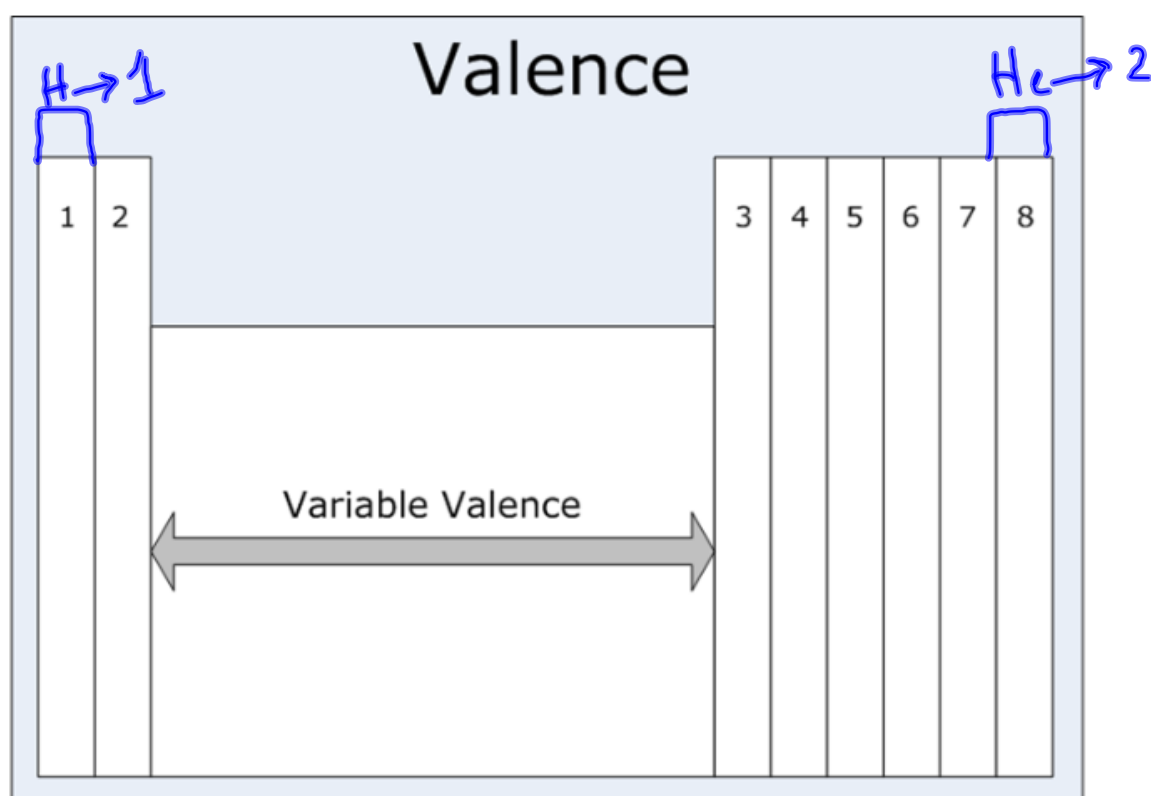
The elements are also categorized into periods, or horizontal rows.



- Periods (rows of periodic table):
 - Properties (chemical and physical) are NOT alike as you go from left to right.
 - Each element in a period has the same number of energy levels (can have different sub-orbitals)
 - As you go left to right, 1st element is an extremely active solid and last element is inactive gas
chemically active/inactive
 - Also increase atomic number (#p⁺) as you move from left to right

- Families or Groups:
 - Columns on periodic table
 - Elements in each family have very similar physical and chemical properties
 - All elements in a family have the same number of valence electrons

- Hydrogen
 - Even though it is "attached" to Group 1, it is NOT a part of Group 1
 - NOT a part of the group because it has different physical and chemical properties
 - Gas at room temperature
 - 1 e^- in 1 energy level
 - only needs 2 e^- to fill energy level



- Specific Families:
 - Group 1 \rightarrow Alkali Metals
(Starts with Lithium)
 - 1 valence $e^- \rightarrow$ often react
with Halogen family ($7e^-$)
 - Very reactive, especially with water

